

## REMARKS

Claims 1-52 and 54-57 are pending. Claims 1-22, 24-33, 38, 43-52 and 54-57 have been amended. Claim 53 has been canceled. In view of the following, all of the pending claims are in condition for allowance. If, after considering this response, the Examiner does not agree that all of the claims are allowable, she is requested to schedule a teleconference with the Applicant's attorney to further the prosecution of the application.

### **Objection to claims 6-9, 11-12, 26-28, 30, 47-50 and 52**

Claims 6-9, 11-12, 26-28, 30, 47-50 and 52 have been rewritten in independent form. As indicated by the Examiner, these claims are now in condition for allowance.

### **Rejection of claims 1-5, 10, 13-18, 22-25, 29, 31-35, 38-46, 51 and 54-56 under §103(a) as being unpatentable over Sacks et al. (US 6,181,505) in view of Tuttle et al. (US 6,108,151)**

#### **Claim 1**

Claim 1, as amended, recites one of the servo wedges including a preamble that represents a periodic alternating signal, and a processor operable to detect the one of the servo wedges by detecting the preamble before the processor detects any servo data other than the preamble.

For example, referring, e.g., to FIGS. 4, 6-7, 11-12 and 17 and the corresponding disclosure of the present application, a servo wedge 22 includes a preamble 74 that represents a periodic alternating signal (such as a sinusoidal signal). On disk spin up, a processor 40 of a servo circuit 30 exploits the properties of a sinusoid to detect the preamble 74, and thus detect the servo wedge 22, before the processor detects any servo data other than the preamble. After the processor 40 detects the servo wedge 22, it searches for the SSM 76 within a predetermined time window, and then recovers the location identifier 78, which a head-position circuit 214 uses to determine an initial position of a read-write head 32. This technique allows the

processor 40 to detect a servo wedge on disk spin up without the need for the disk to include spin-up wedges, which are often relatively long fields of consecutive logic 0's. By eliminating spin-up wedges, one can increase the disk's data-storage capacity.

In contrast, Sacks does not teach a servo wedge including a preamble that represents a periodic alternating signal, and a processor operable to detect the servo wedge by detecting the preamble before the processor detects any servo data other than the preamble. The Examiner concedes on page 2 of the Office Action that "Sacks et al. fails to teach a processor operable to detect one of the servo wedges during or after disk spin-up search operation without first detecting a spin-up wedge." To detect a spin-up wedge, which comprises servo data, Sacks must first recover (*i.e.*, read) this data to determine whether or not the data composes a spin-up wedge. But as discussed above, the claimed servo circuit can detect a servo wedge before detecting any servo data other than the preamble. In fact, after reviewing Sacks in its entirety, the Applicant's attorney is unable to find any mention of a servo wedge having a preamble that represents a periodic alternating signal (such as a sinusoidal signal).

Similarly, Tuttle does not teach a servo wedge including a preamble that represents a periodic alternating signal, and a processor operable to detect the servo wedge by detecting the preamble before the processor detects any servo data other than the preamble. Instead, referring, *e.g.*, to Tuttle's FIG. 3 and col. 15, lines 13-30, a servo address mark (*i.e.*, spin-up wedge) detector A126 must recover, *i.e.*, read, a servo address mark, which is typically "a long sequence of '0' bits," before the detector A126 detects a servo wedge. However, such "a long sequence of '0' bits" is not a periodic alternating signal. In fact, after reviewing Tuttle in its entirety, the Applicant's attorney is unable to find any mention of a servo wedge having a preamble that represents a periodic alternating signal (such as a sinusoidal signal).

Therefore, neither Sacks, Tuttle, nor the combination of Sacks and Tuttle suggests a servo wedge including a preamble that represents a periodic alternating signal, and a processor operable to detect the servo wedge by detecting the preamble

before the processor detects any servo data other than the preamble. As a result, the combination of Sacks and Tuttle does not satisfy the limitations of claim 1.

**Claims 22 and 38**

Claims 22 and 38, as amended, are patentable for reasons similar to those recited above in support of the patentability of claim 1.

**Claims 2-5, 10, 13-18, 23-25, 29, 31-35, 39-46, 51 and 54-56**

Claims 2-5, 10, 13-18, 23-25, 29, 31-35, 39-46, 51 and 54-56 are patentable by virtue of their respective dependencies from independent claims 1, 22 and 38.

**Rejection of claims 19, 36 and 57 under §103(a) as being unpatentable over Sacks et al. and Tuttle et al., and further in view of Patapoutian et al. (US 5,661,760)**

Claims 19, 36 and 57 are patentable by virtue of their respective dependencies from independent claims 1, 22 and 38.

**Rejection of claims 20 and 37 under §103(a) as being unpatentable over Sacks et al. and Tuttle et al., and further in view of Patapoutian et al. and Cloke et al. (US 5,822,143)**

Claims 20 and 37 are patentable by virtue of their respective dependencies from independent claims 1 and 22.

**Rejection of claim 21 under §103(a) as being unpatentable over Sacks et al. and Tuttle et al., and further in view of Ehrlich et al. (US 6,519,107)**

Claim 21 is patentable by virtue of its dependency from independent claim 1.

**CONCLUSION**

In light of the foregoing, claims 1-52 and 54-57 are in condition for allowance, which is respectfully requested.

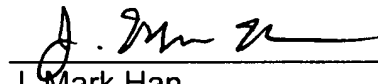
In the event any additional fees are due as a result of this amendment, you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

If, after considering this response, the Examiner does not agree that all of the claims are allowable, then it is respectfully requested that the Examiner schedule a phone interview with the Applicant's attorney at (425) 455-5575.

DATED this 17<sup>th</sup> day of October, 2006.

Respectfully submitted,

GRAYBEAL JACKSON HALEY LLP



---

J. Mark Han  
Attorney for Applicants  
Registration No. 57,898  
155-108th Avenue N.E., Ste 350  
Bellevue, WA 98004-5973  
Phone: (425) 455-5575  
Fax: (425) 455-1046